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Reasona Behind ERP Package Adoption: A Diffusion of Innovations Perspective

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Abstract

Enterprise Resource Planning (ERP) packages have been widely adopted and it is becoming clear that this is driven by multiple rationales that may be simultaneously at odds and complimentary. In this paper, we aim to develop a greater understanding of these rationales by taking ERP packages to be innovations and analysing their adoption with reference to the theory of diffusion of innovations. In particular, we consider the attributes of ERP packages that may affect their adoption such as relative advantage, compatibility, complexiblity, trialability and observability. We argue that users' perceptions of these attributes are not always accurate and these 'misconceptions' can further explain reasons for ERP adoption or rejection. Although our analysis aims to provide rich insights into the adoption of ERP packages, the results of the study are arguably of further interest to the more general study of packaged software and the more established literature on custom development.

Keywords: ERP, Packaged Software, Adoption, Diffusion, Innovation.

1 INTRODUCTION

Enterprise Resource Planning (ERP) software is typically a package that is licensed for use, to a client organisation. ERP packages are applications sold as being able to automate a wide range of processes within organisations. Moreover, their ability to facilitate the integration of processes and allowing those in organisations to tap into so called best practice functionality embedded within the software are common reasons why they are perceived as innovative (Klaus *et al.*, 2000; Swanson, 2003). Rogers (2003) defines innovation as an idea, practice or object that is perceived as new by an individual or other unit of adoption. Thus, ERP packages can be characterised as an innovation, which has the potential to trigger change at organisational and inter-organisational levels. However, in order for ERP packages to 'innovate', they need to be adopted, and this implies that they need to diffuse. Rogers (2003) defines diffusion as the process in which an innovation is communicated through certain channels, over time, among the members of a social system. Perhaps it is not surprising then that, although ERP packages have been studied extensively, the research tradition in this area is fairly focused upon the implementation process cf. (Holland and Light, 1999; Krumbholz *et al.*, 2000; Parr and Shanks, 2000; Huang and Palvia, 2001). It takes time for an innovation to diffuse and we think it is a good time to start considering this process. After all, there is an emerging body of work, which points to the inextricable links between adoption decisions and consequences for use (Pollock *et al.*, 2003; Scott and Wagner, 2003). Thus, we view ERP packages as innovations and use diffusion of innovations theory to deepen our understanding of the reasons behind their adoption. Typically, it is those in organizations that are reported as determining the appropriateness of a package, based upon the functionality it contains and its fitness for purpose (Lucas *et al.*, 1988; Chau, 1994). However, the matter is not that one-sided or necessarily that sensible. We argue that the more commonly recognised reasons for adoption, and even those less well known, are pro-innovation biased. For example, in a recent survey, success in package adoption and the attainment of business benefits were espoused by the majority of respondents (Swanson, 2003). In contrast, we argue for alternative interpretations of these reasons, as barriers to adoption or grounds for rejection. Although the focus of this paper is upon ERP packages, we intend for our analysis to be taken to have applicability for the more general study of packaged software. Moreover we further situate our work within the field of information systems by referring, as we think necessary, to existing custom development research. Next, we introduce diffusion of innovation theory, as it has been used in information systems research. Then, we consider a number of reasons behind ERP adoption and analyse them using diffusion of innovations theory. The conclusions follow.

2 DIFFUSION OF IS INNOVATION

Diffusion of innovation theories can be viewed from a number of perspectives. Borrowing from, organisational studies, (Baskerville and Pries-Heje, 2001) suggest genealogical and ecological views. Genealogical views, centralise consensus and regulation in the diffusion setting, and ecological views, conflict and competition. (Damsgaard and Lyytinen, 1997) have also used this distinction, but convey the genealogical as concerned with the micro and ecological with the meso/macro environment. The first is argued to facilitate the understanding of diffusion patterns amongst similar organisations and populations, whilst the second focuses upon how extra-organisational power dependencies shape the diffusion process. Innovation diffusion research has also been characterised as rational and interpretive (Beynon-Davis and Williams, 2003). One of the most widely used rational theories, is Rogers' diffusion of innovations theory of (Rogers, 1995; 2003). Models such as this, aim to trace and explain the path of an innovation's acceptance through a given social system, over time. Although, it is acknowledged that social influences may impede or facilitate the process, the emphasis tends to play on the innovation itself. Rogers' theory has been criticised for not taking into account the particularities of complex information technologies (Lyytinen and Damsgaard, 2001). The theory has been judged as poorly equipped to facilitate the understanding of how different groups interact in the production and provision of an innovation as well as lacking attention to acts of reinvention and the

consequences of innovation adoption (Kautz and Pries-Heje, 1996; Allen, 2000; Elliot and Loebbecke, 2000; Papazafeiropoulou, 2002b). In contrast, interpretive approaches, such as those concerned with the social construction of technology (Bijker and Law, 1994), emphasise the way that technologies are 'configured' throughout the process of diffusion by various actors, or relevant social groups, such as professional associations. A further, less well-reported perspective of innovation is that of critical theorists. (Suchman and Bishop, 2000) argue that although innovation is often associated with 'the new' it is possible that some innovators actually wish to reinforce existing power structures. Thus, those resisting the innovation can be the 'real' innovators, as they desire something different.

In this paper we use Rogers' theory as a platform for understanding what we might see as the rational, reasons for packaged software adoption. His work has been useful to help us uncover some of what we might see as the 'less sensible' reasons. Additionally our view about the pro-innovation bias of the diffusion research coincides with that of Roger's, who agues that although the problem has been identified not enough has been done to overcome it. Pro-innovation bias is the implication of the diffusion research that an innovation is always beneficial and should be adopted by all members of the social system. In this paper offer an alternative interpretation of ERP package adoption by analysing rational and 'irrational reasons' behind this. However, Rogers' work has limitations for our research objective and thus we refer to the interpretive and critical traditions to add richer insights.

2.1 Perceived Attributes of Innovations and Other Factors Affecting Adoption

According to (Rogers, 1995), and other rational diffusion theorists such as (Moore and Benbasat, 1991; Agarwal and Prasad, 1997), there are certain characteristics of innovations which affect their rate of adoption. Rogers' 'perceived attributes of innovations' are detailed below:

Relative Advantage:	The degree to which an innovation is perceived as being better than the idea it supersedes
Compatibility:	The degree to which an innovation is perceived as consistent with the existing values, past experiences, and needs of potential adopters
Complexibility:	The degree to which an innovation is perceived as relatively difficult to understand and use
Trialability:	The degree to which an innovation may be experimented with on a limited basis
Observability:	The degree to which the results of an innovation are visible to others

Rogers' makes quite a lot of these attributes in his work and indeed, other studies have sought to extend these further (Moore and Benbasat, 1991; Agarwal and Prasad, 1997). A point on which we agree with Rogers is that all innovations are not the same and there are some elements of the innovation itself that the potential users perceive as important (or not) during their decision to adopt or reject the innovation. We do not doubt that these attributes can be extended and divided further, but we believe that Rogers' set provides with a good basis for us to realise our objective. In addition to this, Rogers identifies other factors contributing to adoption although he does not give them the same level of voice in his work. He categorises these as:

Type of innovation-decision:	Optional – more likely to be adopted rapidly. Collective - many hands in the decision process may slow things down. Authority - predetermined adoption by another party.
Communication channels :	Individual-interpersonal and mass media channels can both speed up and slow down rates of adoption.
Nature of the social system :	The so called 'norms' of the social system within which the innovation is to be adopted may have an impact. Levels of social system interconnectedness may also feed into this.
Extent of change agents'	Those agents responsible for promoting innovations can have a variety of effects,

promotion efforts : depending upon when in the diffusion cycle they are involved. For example, less input may be required when 'opinion leaders' adopt.

We agree with (Beynon-Davis and Williams, 2003) who criticise the rational account of technological diffusion. They argue that complex network of actors and their conflicting ideas or requirements can influence the adoption or rejection of a technology. Thus, we see technologies as socially constructed and subject to multiple interpretations. Rogers' theory doesn't explore this area as fully as we would like we use his theory as a basis for the unpacking of the reasons for adoption only.

3 REASONS FOR ERP ADOPTION

The following review of the reasons why ERP packages may be adopted is not intended to be exhaustive. Our intention is to give a flavour or those reported to temper some of the hyperbole around ERP adoption and give an alternative interpretation.

3.1 The Desire for Standardisation

Whether it is to fit with 'industry standard' practices (Lassila and Brancheau, 1999) or achieve synergy across national boundaries and product lines (Bingi *et al.*, 1999), the allure of standardisation is a key reason for the purchase of ERP packages. At Dow Corning for instance, it was suggested by a Director in Europe that the SAP product would be a fast and effective way to attain global discipline and integrated common systems (Ross, 1999). In terms of diffusion, compatability is therefore an important consideration. Rogers relates compatability with existing values, belief, past experiences and the needs of potential adopters. Consequently, the predominant focus is upon the extent to which an innovation will be compatible with the existing state of affairs in the adoption setting. However, in terms of ERP packages, compatibility, from a standards perspective, may be broader than the existing situation may require, and thus, it is also rooted in ideas of the future.

Whilst ERP packages may be procured to integrate the existing situations within and surrounding organisations – their compatibility with the existing situation is often downplayed. Indeed, the 'veneer' of a chance to change a situation, is probably a better exemplar for ES adoption than to maintain the status quo. Here the compatibility of the innovation with certain potential adopter needs (i.e. to engender change) becomes paramount. This motivation for adoption if further linked with perceptions of relative advantage over the existing situation. As shown above, ERP packages are thought to enable better organisational communication through shared, standardised systems and a belief in their ability to engender commonality. Yet, other studies of IT and standardisation suggest that standards cannot resolve problems in communication (Damsgaard and Truex III, 2000). Implementing ERP packages will not necessarily reconcile communications problems or improve communications capabilities. Increased communication capabilities might not be a good thing anyway. For example, the adoption of packaged software, for the purposes of improving communication throughout Eng Co., was variously interpreted as good and bad by management and sales staff (Light, 2003). Further problems also arise with blindly adopting ERP packages because of the perceived benefits of compatibility and relative advantage. First, the standards embedded in the technology and implied by the technology may not be compatible with adopters, yet because others in any relevant social system have adopted, the decision may be a forced one, especially when combined with other promotional efforts of vendors and the effects of mass media campaigns (as discussed later). This amplifies the problems for those in the adopting organisation as the propensity to change in line with the standard may not be present. More seriously, the standards implied may not sit at all well with either the existing or any future model of the organisation.

3.2 To 'Overcome' IS Legacy Problems

The problems associated with getting IS to work are often characterised as Legacy Information Systems – old, outdated technologies that are muddled by years of modification, degradation and general lack of attention (Bennett, 1994; Warren, 1999). ERP packages have been widely cited as the 'solution' to the problems they may pose. The relative advantages of ERP packages in this respect are that they are argued to be: well structured and allow for maintenance and future development to be outsourced to a vendor (Butler, 1999; Scheer and Habermann, 2000): easily operated, supported and maintained due to the ability of the implementing organisation to tap into available a skills base for the software (Bingi *et al.*, 1999; Sumner, 2000; Willcocks and Sykes, 2000); and well documented and organised (Golland, 1978; Butler, 1999). The benefits of packages in general 'over' legacy information systems are widely espoused in the IS media and by software vendors. Yet, there are potential difficulties with viewing ERP packages as relatively advantageous to legacy information systems. At Global Petroleum, the legacy information systems comprised earlier forms of packages that had been heavily modified (Light, 1999). The ERP package was being introduced in an attempt to deal with problems associated with an existing package. Thus, adopter and diffuser misconceptions about what constitutes a legacy information system imply the treatment of ERP packages as different to legacy information systems is inherently flawed, as they are one in the same. The implication of this is that although ERP packages may have diffused rapidly because of their perceived ability to relieve legacy information system problems, they may also introduce new ones.

3.3 To Deal with an Applications Backlog

It is suggested that, faced with application backlogs due to rising software development costs and the need for rapid deployment of new systems to keep pace with strategies, those in organisations have increasingly turned to ERP packages (Li, 1999). As ERP packages are pre-built, it has been suggested that information systems managers can expect shorter implementation timeframes and faster attainment of project objectives (PriceWaterhouse, 1996; Li, 1999). Indeed, it is further argued that the lengthy lag between a user's requests for a new system and implementation (a supposed feature of custom development) has been replaced by market-based approaches where software vendors can produce new releases faster than consumers can absorb them (Sawyer, 2001). Packages have also been reported as lessening the requirement for extensive resources to be focussed upon maintenance activity as this is essentially outsourced to the vendor (Butler, 1999). Thus, there appear to be relative advantages of ERP package adoption over comparable custom development. However, organisations still have to wait for the product to be built (Butler, 1999), and when they have implemented it, they may have to wait for upgrades and maintenance activities to be performed (Gross and Ginzberg, 1984). Dell decided that the deployment cycle for the SAP package would have taken them too long. Their plan was estimated to require several years to implement and the project was abandoned (Fan *et al.*, 2000). Moreover, when an organisation adopts ERP packages, they outsource aspects of their change processes. If they want to change and this change requires changes to the ERP package, they must wait and hope that the developer does so and in a fashion that suits them. Late in the 1990s some of those in organisations had already implemented ERP packages that did not offer CRM functionality and therefore, they had to decide if they were going to wait for the CRM functionality to be built by their ERP vendor, or adopt an additional package such as Siebel (Holland and Light, 2001). In an attempt to speed up the time to market, SAP and People Soft acquired, or set up strategic alliances, with CRM vendors. In this case, even for the ERP package developer, there was a relative advantage in buying over building.

3.4 The Role of Selling

As the innovation literature points out, selling may occur via mass media communication channels or via the 'supply push' effects of change agent promotion efforts. (Oliver and Romm (2000) suggest that packages could not be a solution to organisational problems unless vendors were selling them.

What this means is that organisations may select ERP packages as a result of an approach by a vendor or other implementation intermediary that has actively sought them out to sell them a product. This may include the use of vendor promotions, publications, market surveys, the internet, mailing lists. For example 'strong ERP vendor marketing' and 'The right solution and message at the right time ..' have been cited as key reasons for its adoption (Klaus *et al.*, 2000). Another, perhaps more subtle form of selling is that undertaken by people in organisations. In scene one of the case of Metallica, (Avital and Vandenbosch, 2000) this process is amply illuminated, although not explicitly discussed. The Head of Systems Development and the Chief Trainer have to explain to the CEO what the software package they are proposing is, the benefits of implementing it, allay fears about the product in question and the potential problems that might be encountered in implementation such as migration and training issues. Therefore, those in organisations may be 'sold' the idea of ERP packages and, due to the market orientated nature of this strategy, a particular product. Moreover, this selling activity may be linked with 'overadoption' where an ERP package is chosen where it was not necessarily the best choice. Interestingly, the determinant of best choice in the innovation literature refers to the 'eyes of the expert'. In ERP package terms we would therefore think of these people as adopters in organisations, but also implementation intermediaries, such as consultancy groups, as well as the package vendors themselves. However, it is unrealistic to assume that the 'sellers' only have the adopters interests at heart, and that adopters are a homogenous group.

3.5 Cost

In one study, 46 per cent of respondents cited lower cost than custom development as a reason for adoption (PriceWaterhouse, 1996) and in another, 72 per cent, (Klepper and Hartog, 1992). It has even been suggested that cost is one of the biggest advantages due to the economies of scale companies can tap into (Chau, 1995). Moreover, the costs of acquisition, implementation and usage of packages are argued to be reliably predictable and lower than for custom developed software (Golland, 1978; Heikkila *et al.*, 1991). Cost may also be a reason for the adoption of one product over another. At Siemens Power Corporation, another part of the Siemens group held more licences for the package that was needed and therefore, this information was added into the reasoning for the decision to implement that product (Hirt and Swanson, 1999).

It is not the intention of the authors to discuss the relative advantage of the economies of scale and costs of ERP packages, especially in comparison to custom developments, however this might not be as straightforward as it first seems. Iit is doubtful that FoxMeyer anticipated the ultimate costs of the acquisition, implementation and usage of SAP, which resulted in bankruptcy proceedings (Bicknell, 1998). To implement an ERP package is not just about the price of a licence. Although licences might be inexpensive, further costs arise because of the need to balance the social context with the technology attributes. Moreover, another very unpredictable cost is that related to the ongoing maintenance of the software especially as 'reinvention' of the innovation may occur in the form of customisations (Light, 2001). Therefore, ERP projects might display 'cost over-run', problems normally associated with custom development (Remenyi *et al.*, 1997). Although ERP packages may be perceived as less expensive than custom development, this might not be so.

3.6 The Perception of a 'Tried and Tested' Product

A significant attraction of packages for many organisations is related to the perception of the relative advantages of implementing what is seen as a 'tried and tested solution' (Golland, 1978; Chau, 1995). Packages are promoted as designed and tested by the vendor, and in most cases, as having been installed by other organisations allowing for reference site visits by potential purchasers in order to evaluate the product (Heikkila *et al.*, 1991). Most ERP package vendor websites contain the lists of high profile company cases that promote the benefits of implementing their product. Moreover, ERP packages have been widely reported upon in the IS media. Thus, it is argued that the conditions for estimating the quality and usefulness of the system and the implications for work content and organisation are much better than in custom development projects (Bansler and Havn, 1994).

Although ERP packages are supposedly 'better built' than custom developed software it has been suggested there is a lack of rigour in the product development processes of the packaged software industry (Carmel, 1993; 1997). Moreover, since production and consumption are separated, vendors tend to be evaluated in terms of their products, not their processes (Sawyer, 2001; Howcroft and Light, 2002). Indeed, it is suggested that the best way of evaluating packages, is through experimentation with the operating environment in which the product will be used (Martin and McClure, 1983; Kunda and Brooks, 2000). This implies that the trialability levels of ERP packages are high. In an ideal world, trials would no doubt be possible, but for ERP packages this would normally be too resource intensive. In addition, even if a product is seen to work at a reference site (a widely used surrogate for trialability), it does not follow that it will do so in exactly the same fashion in another organisation (Light, 2003). Finally, the above discussion ignores the instances where custom development has been favoured over ERP, and other forms of package adoption (Dautermann, 1990; Light *et al.*, 2001). As (Quintas, 1994) suggests, any form of software development is often a difficult and flawed process in which timescales, resource inputs and product quality cannot be predicted with certainty.

3.7 The Availability of a Broader Knowledge and Skills Base

ERP packages are usually produced for a mass market and this is inevitably perceived as affording a wider availability of support than custom developed software, where knowledge of the software is specific to the application. The adoption of ERP packages for this reason is evident at the Crosfield, DMC Prints and Nokia organisations where only a few employees were capable of handling the administration and development of their existing custom developed software (Dolmetsch *et al.*, 1998). Problems may arise though, if a particular form of package or a specific product become very popular and this may lead to difficulties for those in a consumer organisation being able to obtain the skills they need. It also follows from this that problems may also emerge if a product is, or becomes, less popular which might mean that the support for the package may be hard to find. This question of popularity is not just related to the package in question but also to the propensity of those who may support the package to continue providing this. Reinvention may dissuade vendors from providing upgrades and they may also be so extensive as to require a custom software developer base with an associated set of skills that may also reduce in popularity which, as is commonly recognised is a feature of the IS profession due to the need for developers to constantly reinvent themselves (Brancheau *et al.*, 1996), and the supremacy of development over maintenance (Swanson and Beath, 1989). Consequently, although the decision to purchase ERP packages limits the problem of finding someone who knows about the software ERP packages share the problem of acquiring the skills base. For example, the lack of SAP consultants in the late 1990s/early 2000s (Sumner, 2000; Willcocks and Sykes, 2000), echoes the reported shortage of Assembly skills in 1994 (Bennett, 1994).

3.8 To 'Free up' the information systems Function

Very early in the usage of packaged software, it was recognised that one of its' relative advantages over custom development was that it could lead to the release of information systems personnel to work on other projects (Golland, 1978). Additionally, a recent survey reported that 40 per cent of respondents felt that packages would allow for reductions in the in-house development team (PriceWaterhouse, 1996). This is argued to be the case as the consumer organisation will need to allocate fewer resources to development and maintenance activity because this is outsourced to the vendor (Butler, 1999). However, it is easy to interpret these findings as a way to slash the need for in-house information systems support. Potentially, there may not be a need for the requirement for a large development work force, however the market-oriented context of ERP packages clearly requires the in-house information systems function to perform new tasks (Sawyer, 2001). Moreover, if reinvention of the innovation, in the form of customisation, is performed as a consequence of adoption, some development work will still be necessary (Light, 2001). Thus, the extent of the suggested and perceived possible reductions in the information systems function may be overstated as a reason for ERP package adoption.

3.9 To Implement Change

The general opinion is that when those in organisations choose to implement ERP packages there will be a need for organisational change (Glass, 1998). Very simply, organisations invariably change to some degree the ways that they work in concert with those ways inscribed into the package. Within the context of reasons for adoption therefore, it can be argued that people in organisations may choose to implement ERP packages with the explicit desire to force change, or use the ERP packages as the 'excuse' for change (Champy, 1997). This can be characterised as a relative advantage over custom development, as whilst we would also argue that custom development may be used to facilitate change, because of the pre-built nature of ERP packages the argument has the potential to be made much more strongly. However, it has been suggested that some apparent innovations may serve to reinforce the status quo, rather than bring anything fundamentally new into the adoption context (Suchman and Bishop, 2000). Thus we have to be careful about pronouncing the relative advantage aspects of ERP packages capabilities to drive change. ERP packages may be used to reinforce managerial control systems rather than improve everyday working life for non-managerial employees. Consequently, relative advantage, as a concept has to be unpacked at the organisational level to consider the relative advantage for various social groups. It may be those that resist ERP package adoption are the real innovators, as they desire something different to what has gone before.

3.10 To Attain Best Practices

Somewhat allied to the desire to implement change is the use of packages to adopt best practices. The idea that ERP packages are tried and tested has already been discussed. Strongly related to this idea is, that through this process of usage and testing, 'best practices' become inscribed into the software. The central theme is that there are advantages to be had by adopting ERP packages of over similar custom development because of the ability to 'buy into' the best practices, or best processes and functionality, that are written into the software (Klaus *et al*., 2000). However, questions have to be raised about possibility of the attainment of the perceived advantages to be gained from the adoption of standard best practices. The forerunner to ERP packages, MRP systems, were also supposed to embody best practices and the point here, which holds for ERP packages too, is that what may be good for one adopter may not be for another (Swan *et al*., 2000). It appears that mass media effects and promotion of products by vendors may overstate the value of standardised best practices to the adopter population. A less pronounced advantage is that of the social prestige associated with the adoption of any so called best practices and the observability of this to others. This is discussed further next.

3.11 Bravado

The adoption of ERP packages for the purposes of impressing others is not widely reported in the literature. The subject does appear, but it is not treated as worthy of study in it's own right. For example, a reason for the adoption of an ERP package in one study was "To be able to show the big boys" (Adam and O'Doherty, 2000) and in another, it was because many other chemical companies were implementing it (Ross, 1999). A reason for adoption might also be that the organisation wants to obtain the kudos of being perceived as at the cutting edge (Oliver and Romm, 2000). What is clear, is that there are distinct links here between theories of management fashions and adopter behaviour. However, although ERP packages display the characteristics of fashions, they become too embedded within organizations to decline in the way that 'true' fashions might (Westrup, 2002), platformed shoes for instance. However, the processes and reasons for adoption are often fuelled by bullishness and ideas of being fashionable. Thus, the promotional effects of change agents, mass media and pressures from the social system to adopt, 'or die', become clear, if not necessarily sensible reasons for adoption. To add further weight to this, one survey highlighted that 66 per cent of respondents agreed that "without this package we would be at a competitive disadvantage in our industry" and 50 per cent were motivated to adopt because "we were one of the first in the industry to adopt this package" (Swanson, 2003): 65-66). Whilst bravado is not widely reported in ERP packages studies it

should not be surprising that this is involved, information systems research is well furnished with stories that indicate the presence of bravado (Hammer, 1990; Howcroft, 2001).

3.12 Policy

Organisations may determine that the principle actions in respect of their information systems support will be rooted in ERP packages. Thus, sometimes we might view adoption as an authority decision such as at Siemens Power Corporation, where the use of ERP packages was company policy (Hirt and Swanson, 1999). Moreover, the policy was more specific in that it specified a particular product (SAP). Thus, there is the potential for policies to influence ERP package adoption because of the assumption being made by policy makers that there is a product on the market that will meet organisational requirements and even more so where a particular product has been specified in advance.

4 CONCLUSIONS

ERP packages have been widely adopted in recent years but very little work has focussed upon the reasons for this. In this paper, we attempt to tackle the pro-innovation bias present in many of the reasons reported for the adoption of ERP packages and deconstructed these with the assistance of diffusion of innovations theory. In doing this, it becomes clear that the reasons we have outlined can be viewed as reasons to adopt and as reasons against the adoption of ERP packages. Also, our analysis begins to illustrate that reasons for adoption may not be as straight forward as they first appear. In particular, it raises to the surface a number of what might be perceived as 'highly irrational' reasons for selection such as bravado. It is also suggested that even reasons which look sensible may rely on incomplete information and that this might lead to beliefs in packages that are unwarranted and misguided. In summary, it is suggested that some of the reasons why ERP packages may be adopted over custom development may be inter-subjectively agreed as sensible, and that others may not.

Relating our findings with the notions of the innovation diffusion literature we can suggest that the attributes of an innovation can not be objectively defined as the perceptions of the agents involved in the diffusion process can 'blur' those attributes. Especially the efforts of the ERP vendors in presenting their products as having relative advantages towards custom development as easy to use, compatible and trialable are not true for all business cases. Apart from agents outside the organisation there are internal agents that following their personal agendas can mislead decision makers giving false attributes to ERP packages in order to attain their adoption. Thus, "wrong" perceptions about the technology attributes can lead to the rejection of a technology that is viewed as beneficial by common standards. These misconceptions can lead to overadoption which is the case of a company adopting an innovation when experts feel that it should reject. In the case of ERP systems, the role of the 'expert' is commonly played by the software vendors who either do not have the knowledge or is outside their immediate benefits to prevent the adoption. Subsequently, the role of neutral agents who have the knowledge to decide whether an innovation should be adopted or not, while remaining independent of corporate politics is becoming predominant. Indeed the role of organisations such as chambers of commerce and industry and other professional bodies has been described as important in the diffusion of IT innovations such as Information Systems Development (Newell and Galliers, 2000) and electronic commerce (Papazafeiropoulou, 2002a) and can also be applied in the case of ERP packages.

Our analysis does not suggest that all decisions for ERP packages adoption are irrational but we do suggest that organisations should not blindly conform with 'the common sense' when it comes to the adoption of ERP or any other IS innovation. We additionally argue that looking at the 'perceived' attributes of an innovation as the diffusion of innovation theory suggests, is over-simplistic as the perception of a user organisation about an innovation does not always agree with another.

Our study also has broader appeal, in that many of the reasons could be considered in relation to other packaged software applications. Moreover, there are elements of our work that even have resonance

for custom development – particularly in relation to ideas of salesmanship, bravado and organisational change. In terms of future research, we will extend this work by more explicitly considering the temporal dimension, particularly in relation to the consequences of the adoption of this innovation.

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